

No Metallic Poles Used

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sulphate of soda *n*, fig. 9, was now supported upon the end of the discharging train *a*, and its extremity brought opposite to a point *p* connected with the conductor of the machine. After working the machine for a short time, acid was developed at both the corners towards the point, i.e. at both the corners receiving the electricities from the air. Every precaution was taken to prevent this acid from being formed by sparks or

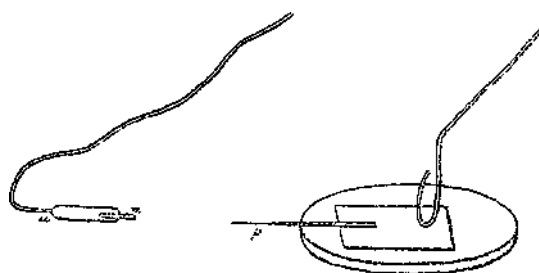


Fig. 9.

brushes passing through the air (58); and these, with the accompanying general facts, are sufficient to show that the acid was really the result of electro-chemical decomposition (202).

200. Then a long piece of turmeric paper, large at one end and pointed at the other, was moistened in the saline solution, and immediately connected with the conductor of the machine, so that its pointed extremity was opposite a point upon the discharging train. When the machine was worked, alkali was evolved at that point; and even when the discharging train was removed, and the electricity left to be diffused and carried off altogether by the air, still alkali was evolved where the electricity left the turmeric paper.

201. Arrangements were then made in which no metallic communication with the decomposing matter was allowed, but both poles (if they might now be called by that name) formed of air only. A piece of turmeric paper *a*, fig. 10, and a piece of litmus paper *b*, were dipped in solution of sulphate of soda, put together so as to form one moist pointed conductor, and supported on wax between two needle points, one *p* connected by a wire with the conductor of the machine, and the other, *n*, with the discharging train. The interval in each case between the points was about half an inch: the

positive point p